



# Great Lakes Legacy Act Project Continues with Design of Sediment Site Cleanup

Monguagon Creek Upper Trenton Channel Site, Detroit River AOC

Great Lakes Legacy Act Project

Riverview, Michigan

January 2022



## Great Lakes Restoration Initiative (GLRI)

The GLRI accelerates efforts to protect and restore the largest system of fresh surface water in the world – the Great Lakes. Since 2010 the multi-agency GLRI provided funding to 16 federal organizations to strategically target the biggest threats to the Great Lakes ecosystem and to accelerate progress toward achieving long term goals.

<https://www.glri.us>

## GLRI's Legacy Act

The Great Lakes Legacy Act is a voluntary partnership program to cleanup sediment and help restore Great Lakes Areas of Concern. Since 2002, Legacy Act partnerships have cleaned up 28 sites in six Great Lakes states and remediated about 4.6 million cubic yards of contaminated sediment. Currently, seven projects are underway to clean another 1.3 million cubic yards.

Completed cleanups have been a springboard for communities to build a foundation for future growth by transforming former polluted areas into attractive locations. Areas that were obstacles to economic growth are now valuable waterfront assets.

<https://www.epa.gov/great-lakes-aocs/great-lakes-legacy-act>

## Contact EPA

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More Information:

<https://www.epa.gov/great-lakes-aocs>  
<https://www.epa.gov/great-lakes/detroit-river-aoc>  
<https://www.detroitriver.org/>



Figure 1. Monguagon Creek – Upper Trenton Channel Aerial

Although inputs of chemical contaminants to the Great Lakes have been significantly reduced over the past 30 years, some chemicals still remain in the mud, or sediment, and can have harmful impacts to the fish and wildlife in the area. As a result of historical contamination, the Detroit River was designated as a Great Lakes Area of Concern, or AOC, in 1987. An AOC is a Great Lakes river or harbor that has experienced significant environmental degradation. A small portion of the Detroit River AOC is known as the Monguagon Creek-Upper Trenton Channel site, referred to as MCUTC. The U.S. Environmental Protection Agency has partnered with Bridgestone Americas Tire Operations has partnered with the U.S. Environmental Protection Agency, or EPA, under EPA's voluntary Great Lakes Legacy Act, or GLLA, to determine the nature and extent of contamination at MCUTC and evaluate options for eventual remediation of the MCUTC site.

## Project Background

MCUTC is located just south of Bridge Road and the Grosse Ile Toll Bridge in Riverview, Michigan.

Monguagon Creek has long served as a channel for industrial and municipal discharges. Historically, it was used for industrial wastewater, and currently it is being used for urban stormwater. From 1951 to 1982, manufacturing wastes were released to portions of Monguagon Creek and the Huntington Drain that feeds into it. Currently, the Huntington Drain pipes stormwater runoff from the surrounding streets and properties to the creek and channel.

Many factors have contributed to the pollution and habitat degradation in Monguagon Creek and the Trenton Channel. These factors include chemicals, bacterial contamination, as well as excess nutrient loads. Sources of chemicals include, municipal and industrial discharges, wastewater treatment bypasses, commercial and residential development, and stormwater runoff.

## Site Investigations

Efforts have been underway to study and eventually clean-up contaminated sediments at MCUTC.

The first Monguagon Creek cleanup was in 1997 with the removal of about 35,000 tons of impacted sediments. However, some sediment had to be left in place due to buried utilities. In 1998, Michigan Department of Energy, Great Lakes, and Environment, or EGLE, conducted additional studies and found some areas of the site still contained elevated concentrations of industrial and urban chemicals, metals, and polycyclic aromatic hydrocarbons, known as PAHs.

To evaluate further cleanup options for the MCUTC, follow-up sediment investigations were conducted in 2011, 2015, 2016, and 2021. These investigations are detailed in a Focused Feasibility Study (FFS; Ramboll 2018) and an addendum to the FFS (Integral 2022). The results of the study are summarized below. The study evaluated three distinct parts of the MCUTC area: the lower end of Monguagon Creek; the western shoreline of the Upper Trenton Channel, or UTC, along the former McLouth Steel site, referred to as UTC-West; and the eastern shoreline of the UTC along the western side of Grosse Ile, referred to as UTC-East. UTC-East contains only low to moderate levels of contamination consistent with an urban setting. Based on these findings, no



Figure 2. Monguagon Creek – Upper Trenton Channel Sampling



Figure 3. Monguagon Creek – Upper Trenton Channel Sampling

## Remedy Selection

The investigations described above identified two MCUTC areas of interest, or AOI, that required cleanup: the mouth of the Monguagon Creek, referred to as AOI-C, and part of UTC-West, referred to as AOI-D. The FFS focused on identifying the best way to clean up AOI-C and AOI-D. The project team developed remedial action objectives, or RAO, for MCUTC and screened remedial technologies for feasibility and effectiveness in meeting the RAOs. The favored remedial technologies were refined to target AOIs and were combined into five remediation alternatives. These alternatives were then evaluated using the following EPA factors most important to the selection process:

- Overall protection of human health and the environment
- Attainment of site-specific remediation objectives
- Long-term effectiveness and permanence
- Reduction of mass, toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost

remediation is planned for UTC-East. Contamination levels are significantly higher in UTC-West and Monguagon Creek, although contaminant types and levels are different in these two zones. Monguagon Creek is heavily contaminated with PAHs at levels up to 100-times higher than levels found in UTC-East. UTC-West also contains elevated levels of PAHs (ten-times higher than UTC-East), but also contains elevated levels of mercury (four-times higher than UTC-East) and polychlorinated biphenyls, or PCBs at levels 10-times higher than UTC-East. Remediation is proposed for UTC-West and Monguagon Creek.



Figure 4. Monguagon Creek – Upper Trenton Channel Areas of Interest (AOI) and their general locations

The FFS details how this process was applied at MCUTC and the outcome is summarized below. Five cleanup approaches were evaluated in detail:

- Remediation Alternative 1: No Action
- Remediation Alternative 2: Thin-Layer Cap in AOI-C and Cap in AOI-D
- Remediation Alternative 3: Thin-Layer Cap in AOI-C and Dredge in AOI-D
- Remediation Alternative 4: Dredge in AOI-C and Cap in AOI-D
- Remediation Alternative 5: Dredge in AOI-C and AOI-D

These remedial alternatives include all of the common remedial treatment technologies for sediments including monitored natural recovery, capping, and dredging. Based on the detailed evaluation in the FFS and subsequent addendum, Remediation Alternative 5's use of dredging was identified as the preferred remedy.

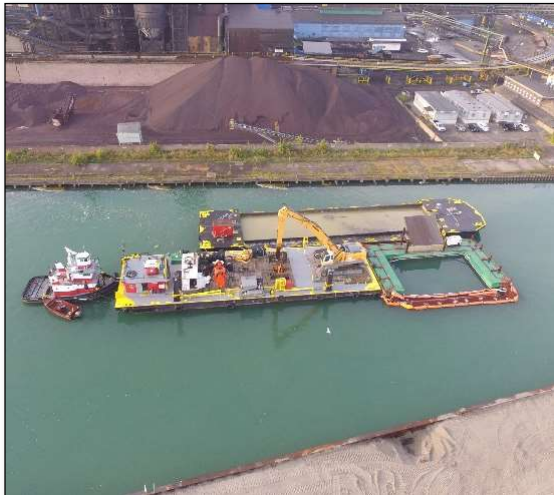


Figure 5. An example of real-life dredging set up at a previous GLRI sediment remediation site in the Lower Rouge River – Old Channel, also within the Detroit River AOC.

### Typical Cleanup Methods

- Monitored natural recovery – takes advantage of the on-going, naturally occurring river processes to contain, breakdown, or reduce the toxicity of contaminants in sediment. Monitored natural recovery involves physical, biological, or chemical processes.
- Enhanced monitored natural recovery (or thin-layer cap) – uses a thin layer of sand, soil, or previously dredged sediment to enhance the process of natural recovery by placing a clean, thin cover (generally less than six inches thick) to isolate contaminated sediment from the environment.
- Capping – involves the placement of clean material (often layers of cobbles, gravel, and clay) over the contaminated sediments. A complex cap design can include geotextiles, liners, and other permeable and impermeable layers to ensure contamination is isolated from the environment.
- Dredging – permanently removes contaminated sediment from a water body without draining or diverting the water. The contaminated sediment is often disposed of in a landfill or US Army Corps of Engineers' confined disposal facility. The term environmental dredging is specific to dredging performed specifically for the removal of contaminated sediment.

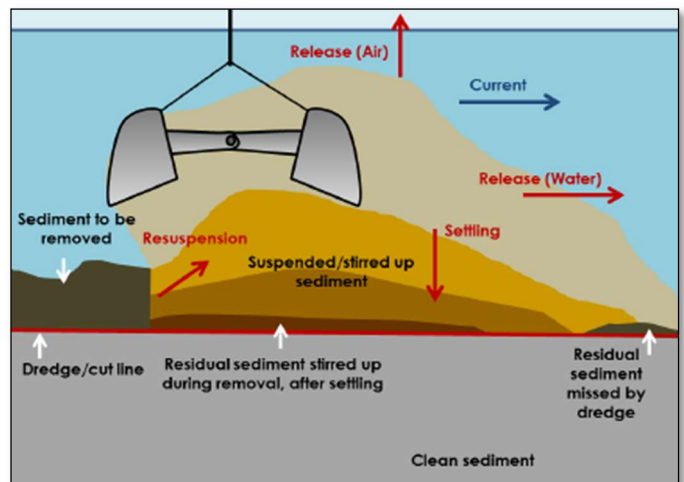


Figure 6. General mechanical dredging process

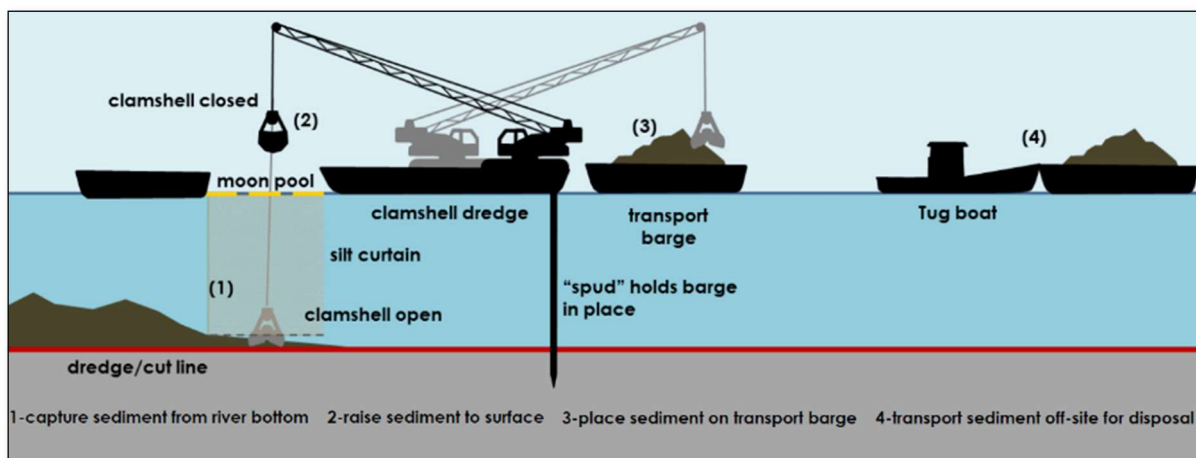


Figure 7. Underwater view of what is occurring during mechanical dredging

## Next Steps for MCUTC

Before cleanup of MCUTC can begin, there are a few more steps to ensure the cleanup is complete, effective, safe, environmentally protective, and consistent with local, state, and federal laws.

First, a Pre-Design Investigation, or PDI, was conducted to confirm the location, area, and depth of contamination. This fieldwork was completed in September 2021. The data will be analyzed and the PDI report is expected to be issued in early 2022.

Using this data, engineers will develop detailed plans for conducting the dredging. These plans are known as the Remedial Design. The remedial design will include specifications and engineering drawings for the entire cleanup, from site prep to dredging, sediment disposal, and site restoration.

Finally, before any remediation work can start, permission from affected private landowners must be granted, and permits must be secured from local, state, and federal agencies.

The timing and duration of all the next steps are uncertain but are likely to require about two years to complete. As these steps progress the schedule for cleanup will be further defined. The community will continue to be kept informed.

## Community Involvement

Community involvement is a critical element of the MCUTC project. There are several ways to stay informed and get involved. The Friends of Detroit River's website page for the Detroit River Public Advisory Council, <https://www.detroitriver.org/pac-1>, includes links to several reports on MCUTC, including the Community Involvement Plan. This plan describes several ways the community can be involved and stay informed.

## Public Outreach

Public meetings are an important element of community involvement. A virtual public meeting will be held January 31<sup>st</sup> so the community can hear about the work happening at the site this year. Community members can also contact EPA any time to ask questions and get added to the distribution list to receive future updates, fact sheets, and announcements.

Surveys are another helpful tool for gathering feedback about what is important to different members of the local community. In 2014, Illinois Indiana Sea Grant interviewed 35 people representing: environmentalists, recreational enthusiasts, property owners, and city officials. The interviews and resultant report, found at [http://www.greatlakesmud.org/uploads/4/0/0/1/40013937/utc\\_needs\\_assessment.pdf](http://www.greatlakesmud.org/uploads/4/0/0/1/40013937/utc_needs_assessment.pdf), informed the Community Involvement Plan for MCUTC. An online survey will be conducted this year with the goals of determining:

- Whether the views shared in 2014 generally continue today and how those views have changed
- Whether the views shared by 35 people represent the broader community and, if not, how they differ
- Whether the views shared about the Trenton Channel are consistent with those specific to MCUTC.

Requests for participation in the survey will be made through the Trenton Channel and MCUTC mailing lists, websites listed below, announcements and flyers. The survey will be designed to ensure ease of access, understanding, and participation.

## Partners

